MCP 8070.2
REVISION D
EFFECTIVE DATE: December 3, 2020
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MARSHALL CENTER PLAN

DE01

(MSFC) TECHNICAL AUTHORITY IMPLEMENTATION PLAN

Concurrence Page

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Document History Log

Status (Baseline/ Revision/ Change/ Revalidation/ Canceled)	Revision/ Change	Effective Date	Description
Baseline		8/21/2006	Baseline
Revision	A	8/31/2009	Updated document based on changes to NPR 7120.5D, revised document number, and added SMA Technical Authority.
Revision	B	12/13/2013	Renumber IMSB-PLAN-7120.5A to IMSC-PLAN-006B. Changes made to reflect requirements in NPR 7120.5E and NPR 7150.2A.
Revision	C	1/17/2017	Renumber IMSC-PLAN-006B to MCP 8070.2 and to make changes to reflect requirements in NPR 7150.2B.
Change	1	7/27/2017	On 7/27/17, at the request of the OPRD, a change was made at 2.2 to clarify applicability, at 2.3 to correct categories of software classes from “G and H” to “A through E,” and to correct the Expiration date on the cover from 2021 to 2022.
Change	2	11/7/2019	On 11/7/19, at the request of the OPRD, a change was made at Figure 5.2 to Combine the Program Chief Engineers block with MSFC Project/Element CEs, at 5.3.4.4 to change the name of the Systems Engineering Office to Systems Engineering Advancement & Leadership Team.
Revision	D	12/3/2020	Updated the document to reflect changes in NPD 1000 to incorporate "Formal Dissent" requirements.

Table of Contents

1. Purpose

The purpose of this plan is to establish and document the implementation of Technical Authority at MSFC, as required by NPD 1000.0, NPR 7120.5, NPR 7120.8, NPR 7120.11, and NPR 7150.2.

2. Applicability

2.1 This MCP applies to all programs and projects as defined in the MPR 7120.1.

2.2 This MCP applies to design, development, and maintenance of hardware and software that are under the purview of Engineering Technical Authority (ETA) and Safety and Mission Assurance Technical Authority (SMA TA).

2.3 This MCP applies to MSFC design, development, and maintenance of software classes A through E.

2.4 This MCP applies to the Formal Dissent adjudication process.

3. Authority Documents

3.1 NPD 1000.0, NASA Governance and Strategic Management Handbook

3.2 NPR 7120.5, NASA Space Flight Program and Project Management Requirements

4. Applicable Documents and Forms

4.1 NPR 7120.8, NASA Research and Technology Program and Project Management Requirements

4.2 NPR 7120.11, NASA Health and Medical Technical Authority (HMTA) Implementation

4.3 NPR 7150.2, NASA Software Engineering Requirements

4.4 MPR 2800.2, MSFC Information Technology Services

4.5 MPR 7120.1, MSFC Engineering and Program/Project Management Requirements

5. Plan

5.1 Introduction.

5.1.1 As identified in NPD 1000.0, Technical Authority is a primary component of Institutional Authority. It consists of three elements: Engineering Technical Authority (ETA); Safety and Mission Assurance Technical Authority (SMA TA); and Health and Medical Technical Authority (HMTA).

5.1.2 To comply with NASA procedures and requirements, MSFC implements Technical Authority through well-established processes and through specific individuals with delegated levels of authority traceable to the NASA Administrator. These individuals are the Technical Authorities, a key part of NASA's overall system of checks and balances who provide independent oversight of programs and

projects in support of safety and mission success. The individuals fulfilling Technical Authority roles are funded independently of programs or projects. In this document, the term Technical Authority is used not only to refer to such an individual, but also to refer to elements of the Technical Authority process. Responsibilities common to the ETA, SMA TA, and HMTA roles, as well as unique aspects of each role, are delineated in NPR 7120.5.

5.2 Delegation of Technical Authority

Technical Authority originates with the NASA Administrator and is formally delegated to the NASA Associate Administrator and then to the NASA Chief Engineer for Engineering Technical Authority; the Chief, Safety and Mission Assurance for SMA TA; and then to the Center Directors. The NASA Administrator delegates Health and Medical Technical Authority to the NASA Chief Health and Medical Officer. Although HMTA is not delegated to MSFC, the Center supports HMTA implementation through the utilization of Engineering and SMA personnel as HMTA awareness and communication links, as described in NPR 7120.11.

5.2.1 Engineering Technical Authority Delegation at MSFC

Engineering Technical Authority is delegated from the Center Director to the MSFC Engineering Director. System-level ETA (program/project level) is delegated from the MSFC Engineering Director to the MSFC Chief Engineer, and then to Program/Project Chief Engineers. Discipline-level ETA is delegated from the MSFC Engineering Director to Engineering Department/Laboratory managers, and then to Division/Branch managers within those organizations. These individuals serve as Lead Discipline Engineers. In accordance with NPR 7150.2, the Center Director has approved Software Technical Authorities in the Office of the Chief Information Officer (OCIO) for software class F. Technical Authority for software classes A through E remains with the defined Technical Authority in Engineering, as described in sections 5.3.4 and 5.3.5.

5.2.2 SMA Technical Authority Delegation at MSFC.

SMA TA is delegated from the Center Director to the MSFC SMA Director, and then to program and project Chief SMA Officers (CSOs).

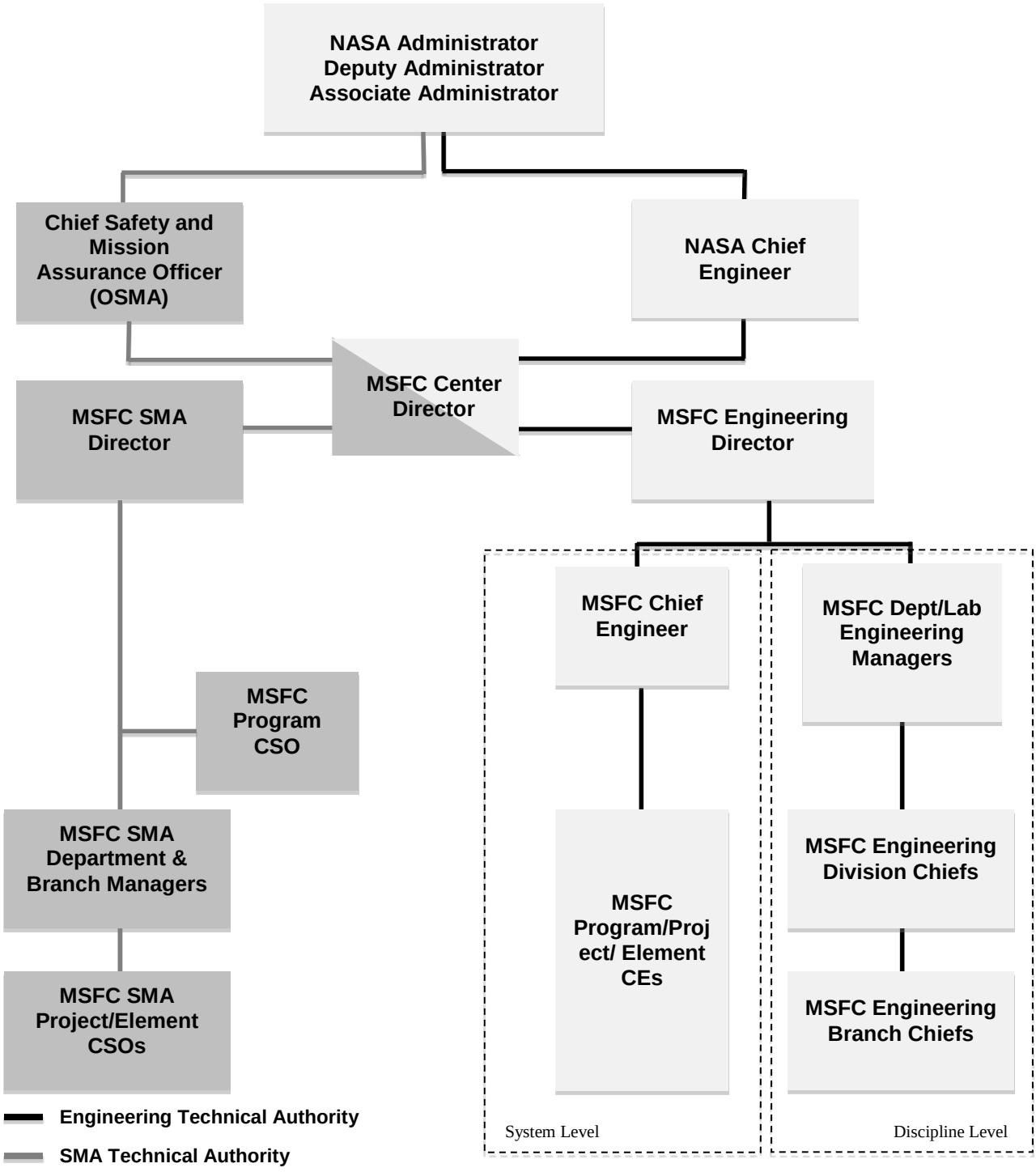
5.2.3 Health and Medical Technical Authority at MSFC.

The Health and Medical Technical Authority function is managed through the Office of the Chief Health and Medical Officer (OCHMO) at NASA Headquarters (HQ), and is not formally delegated to MSFC. Engineering and SMA personnel supporting programs and projects at MSFC facilitate the implementation of HMTA through awareness of the HMTA process and vigilance with regard to potential HMTA issues. As potential issues are identified, they are communicated with the appropriate ETA (Chief Engineer) and SMA TA (CSO). The MSFC Program/Project CSO subsequently notifies the HMTA Point of Contact (POC) at the Johnson Space Center for issues related to human space flight, or the HMTA POC in OCHMO for issues not related to human space flight. For programs/projects that are located at another Center, the assigned Program/Project CSOs are the points of contact for health and medical technical authority related issues.

5.2.4 The Discovery/New Frontiers and the Technology Demonstration Mission Programs are Uncoupled Programs led by MSFC. For projects assigned to NASA Centers and JPL that reside in these programs,

Technical Authority flows from the Center Directors at the respective Centers to Technical Authorities within their organizations. For projects assigned to non-NASA Centers that reside in these programs, the program-level Technical Authorities (i.e. Program Chief Engineer and Program CSO) have NASA technical authority.

Figure 5.2: Technical Authority Flow Diagram



5.3 MSFC Technical Authorities.

The designated Technical Authorities are involved in the day-to-day program/project activities such as requirements development and control board activities. Technical Authorities are also involved in significant milestones such as program/project life-cycle and technical reviews. Such typical processes and normal activities are described in program/project documentation, Center procedures, and Center work instructions. Further responsibilities of the designated TAs are described in this section.

5.3.1 Center Director

The Center Director (or designee) is responsible for establishing and maintaining Center Technical Authority policies and practices, consistent with Agency policies and standards. The Center Director is also responsible and accountable for establishing and maintaining the institutional capabilities required to support programs, projects, and missions. These responsibilities include ensuring the readiness and capability of the Engineering and SMA workforce required to implement and execute technical authority, developing the application of technical requirements, approving waivers and deviations, adjudicating technical conflicts, and verifying launch readiness. On a regular basis, the Center Director or Deputy Center Director chairs the Center Management Council (CMC) to ensure adequate technical and institutional resources are applied to satisfy program requirements and schedules, to review the Center's progress toward technical objectives, and to address risk. The CMC will be convened as needed to adjudicate any instance of Formal Dissent. A Center Director may, at his or her discretion, request expedited hearing of a Formal Dissent at any level within the Agency up to and including the NASA Administrator based upon his or her judgement that a rapid resolution of the Formal Dissent is in the best interests of the Agency and the dissenting individual/organization. For the Center's position on a significant technical issue or a decision regarding an adjudication of a Formal Dissent for which the Center Director does not have the delegated authority, recommendations conveying the Center's position will be documented and forwarded to OCE, OSMA, or other NASA entity as appropriate. The Center Director reserves the approving authority for the selection of program and category 1 project CEs, and adjudicates issues that rise to the Center level. The Center Director ensures the checks and balances environment at MSFC.

5.3.2 Engineering Director

The MSFC Engineering Directorate is the home of the Engineering Technical Authority. By delegation from the MSFC Center Director, the Engineering Director is responsible and accountable for the implementation and execution of Engineering Technical Authority. This is achieved primarily through day-to-day interaction between the CEs and programs/projects. On a regular basis, the Engineering Management Council (EMC) is convened to satisfy a number of Engineering Technical Authority objectives that may include evaluating and approving of technical standards, technical requirements, procedures and technical processes. The Council may also be convened to address instances of Formal Dissent. The Council integrates varying engineering positions into a comprehensive engineering solution, when required. The Engineering Director chairs the EMC.

5.3.2.1 Engineering Technical Authority is implemented by using Center processes developed and approved for programs and projects. Some of these include program/project technical reviews, independent reviews and evaluations, and day-to-day activities conducted throughout MSFC. These activities are conducted with the participation of the designated Engineering Technical Authorities who work in partnership with programs/projects and are independently funded.

5.3.3 MSFC Chief Engineer

By delegation of Engineering Technical Authority from the Center Director through the Engineering Director, the MSFC Chief Engineer (CE) is responsible and accountable for the consistent and successful implementation of Engineering Technical Authority through the Chief Engineers' Office. The MSFC CE is responsible to the Engineering Director for the development and implementation of systems engineering processes for MSFC programs/projects. The MSFC Chief Engineer has the overall technical management responsibility to provide leadership, guidance, and direction to the Program/Project/Element CEs. The MSFC Chief Engineer serves as a member on the Engineering Management Council and works closely with the Engineering Director and the Engineering Leadership Team to resolve issues that rise to the Directorate level. To ensure effectiveness as a member of the Council, the MSFC CE works closely with his/her subordinate management team to stay abreast of the technical issues and the effectiveness of the implementation of systems engineering process. The MSFC CE is informed of significant technical conflicts that may need to be addressed at the Directorate Level in the Engineering Management Council and Formal Dissensions.

5.3.4 Program/Project/Element Chief Engineers

5.3.4.1 The Program/Project/Element Chief Engineers (CEs) serve as ETA for systems in support of their assigned program/project/element. The CEs, in partnership with the Program/Project/Element managers and CSOs, facilitate an environment of checks and balances frequently achieved through healthy tension among the three entities. In exercising engineering technical authority, the CEs ensure that the programs/projects/elements have identified and imposed appropriate technical requirements, that application of those requirements matches the needs of the program/project for success and affordability, and that the functional system meets the requirements. CEs identify technical risks and the implications of those risks to the program/project/element managers. They work to find technically adequate solutions that best meet the needs of the program, with an understanding that program needs include mission performance, budget, and schedule goals. The CEs serve as ETA for all program/project milestone reviews. Paramount criteria for carrying out this duty include a sufficiently detailed understanding of the system and an in-depth knowledge of the technical work to make sound, responsible technical decisions to determine whether the appropriate technical requirements and rigor have been applied to the program/project/element and to ensure that the upper level requirements are properly flowed down to the lower level elements. While the CEs have the overall responsibility for ensuring that appropriate specifications and standards have been imposed on the programs/projects/elements, they seek advice from the experts in Engineering and SMA to determine the appropriate specifications and standards requirements to ensure success.

5.3.4.2 The Program/Project/Element CEs, as the system technical authority, are responsible for approving, by signature, all waivers and deviations written against approved technical requirements, technical processes, or methods that may affect safety and mission success. Chief Engineers must engage the appropriate engineering leaders and institutional engineers when a variance is written against a technical requirement and draw on the technical expertise of engineering leaders when requirements are in question, or at any time it is deemed appropriate to ensure flight safety. As a delegated Technical Authority for software, the CEs are responsible for addressing and approving waivers or deviations against the NPR 7150.2 requirements. Their primary focus is on software classes A, B, and C. Chief Engineers approve waivers and deviations against the NPR7150.2 through the program/project/element established configuration management process as they would with any other waivers or deviations.

5.3.4.3 Chief Engineers have a responsibility to aid in the resolution of technical conflicts on their programs, projects, or elements. The goal should be to use normal conflict resolution approaches and resolve the issues at the lowest level possible. In the event that an individual chooses to declare a Formal Dissent, the CE works with the dissenter in execution of the Formal Dissent Process (see section 5.4). In instances where there is a CE at a higher level (program vs. project, for example), unresolved conflicts raise to the higher level CE before the EMC. All unresolved conflicts may be elevated to the EMC, and CMC if necessary.

5.3.4.4 If there is no Formal Dissent, the position of the Chief Engineer is the Engineering position on any issue. In the matter of a Formal Dissent that is elevated to the EMC, if the EMC decision agrees with the CE and the dissenter chooses not to elevate the conflict higher, the CE/EMC position is the Engineering position. If the EMC decision agrees with the dissenter, the CE has an option to declare a Formal Dissent and elevate the discussion to the CMC. If the CE chooses not to declare a Formal Dissent, the EMC position is the Engineering position, and the CE has an obligation to present that position to the program/project/element as such.

5.3.4.5 The Program/Project/Element CEs should coordinate with the Systems Engineering Advancement & Leadership Team on matters related to systems engineering policies and processes to ensure that the program/project/element implementation of systems engineering is consistent with the Center policies.

5.3.4.6 Chief Engineers support HMTA implementation through the utilization of Engineering personnel as HMTA awareness and communication links as described in Section 5.2.

5.3.5 Engineering Management/Lead Discipline Engineers (LDEs)

5.3.5.1 Engineering management including the Engineering Director are responsible and accountable for the performance of assigned technical work of the Center. Managers will listen when their workforce raises technical issues and take action when required. Managers will actively participate on the Engineering Management Council and provide discipline expertise when making technical decisions. Engineering managers will support the chief engineers and lead discipline engineers in their duties as ETAs.

5.3.5.2 The LDEs are all levels of supervisors within the Engineering Departments and Laboratories. These individuals support the Program/Project/Element CEs, establish discipline requirements and provide technical recommendations to the Program/Project/Element CEs for waivers, deviations and exceptions to discipline, technical requirements applied to MSFC programs and projects. The LDEs provide detailed technical information to the CE related to programs/projects, define technical requirements in conjunction with the CE and program/project team, and ensure that technical waivers and exceptions to the requirements are technically acceptable and that the associated risks are identified.

5.3.5.3 As a delegated Technical Authority for software, the LDEs are also responsible for addressing and approving waivers or deviations against the NPR 7150.2 requirements, for software classes D and E related products such as test software subroutines, software for operating or controlling of test equipment, simulation or engineering analysis software that are non-deliverable items to program/project/element. The LDEs work closely with and through the CEs to define technical requirements applied to MSFC programs projects and to address waivers and deviations on software classes A, B, and C. For software classes A, B, and C, the typical process for waivers and deviations is through the chief engineer's board

and/or the program/project/element control board. For software classes D and E, as these are not necessarily program or project related, the LDEs have the responsibility to process a waiver or a deviation through his/her office's internal process such as a memorandum for record.

5.3.5.4 The LDE, in conjunction with SMA and the programs/projects/elements, is instrumental in establishing technical requirements to ensure that the appropriate specifications and standards are applied in the correct manner during early phases of program/project/element development. As the program/project/element develops, the LDE continues to exercise authority for the interpretation, changes, waivers and exceptions of requirements related to the responsible discipline along with the CE.

5.3.6 OCIO-appointed Software Technical Authority (SwTA)

For business and information technology infrastructure systems, the SwTA appointed by the OCIO will evaluate and approve waivers and deviations in accordance with the process as defined in MPR 2800.2.

5.3.7 Safety and Mission Assurance (SMA) Director

5.3.7.1 The SMA Director, by delegation from the MSFC Center Director, is responsible and accountable for the implementation and execution of SMA TA that includes Safety, Quality, Reliability and Maintainability. The SMA Director is thus responsible for the organizational capabilities required to implement and execute technical authority, develop and apply technical policies, standards, requirements, and procedures, approve waivers and exceptions, adjudicate technical conflicts, and verify launch readiness through the Chief SMA Officers' signatures on the applicable certificates of flight readiness (CoFR), and by his signature at the Center Director's pre-flight readiness review. The SMA Director will chair a Safety and Mission Assurance Council (SMAC). This Council is chartered to evaluate technical issues whether or not declared as Formal Dissent, risk assessments, key SMA products and solutions and to provide technical advice and counsel to the Chief SMA Officers, and Center leadership. The Council integrates varying discipline positions and perspectives to establish a comprehensive SMA position, when required. The SMA Directorate, in partnership with the MSFC organizations, ensures that "checks and balances" exist between the SMA organization, Engineering, and the Program/Project Offices.

5.3.7.2 From the NASA Chief, SMA, the SMA Director is also delegated to provide independent assessment of programs and projects in support of Headquarters Programmatic Audit and Review process and the Safety Mission Success Review (SMSR). All results of SMA independent Assessment efforts are reported to the NASA Headquarters (HQ) OSMA Independent Assessment focal point. These results will also be provided to the appropriate CE and CSO.

5.3.8 Program Chief Safety and Mission Assurance (SMA) Officers

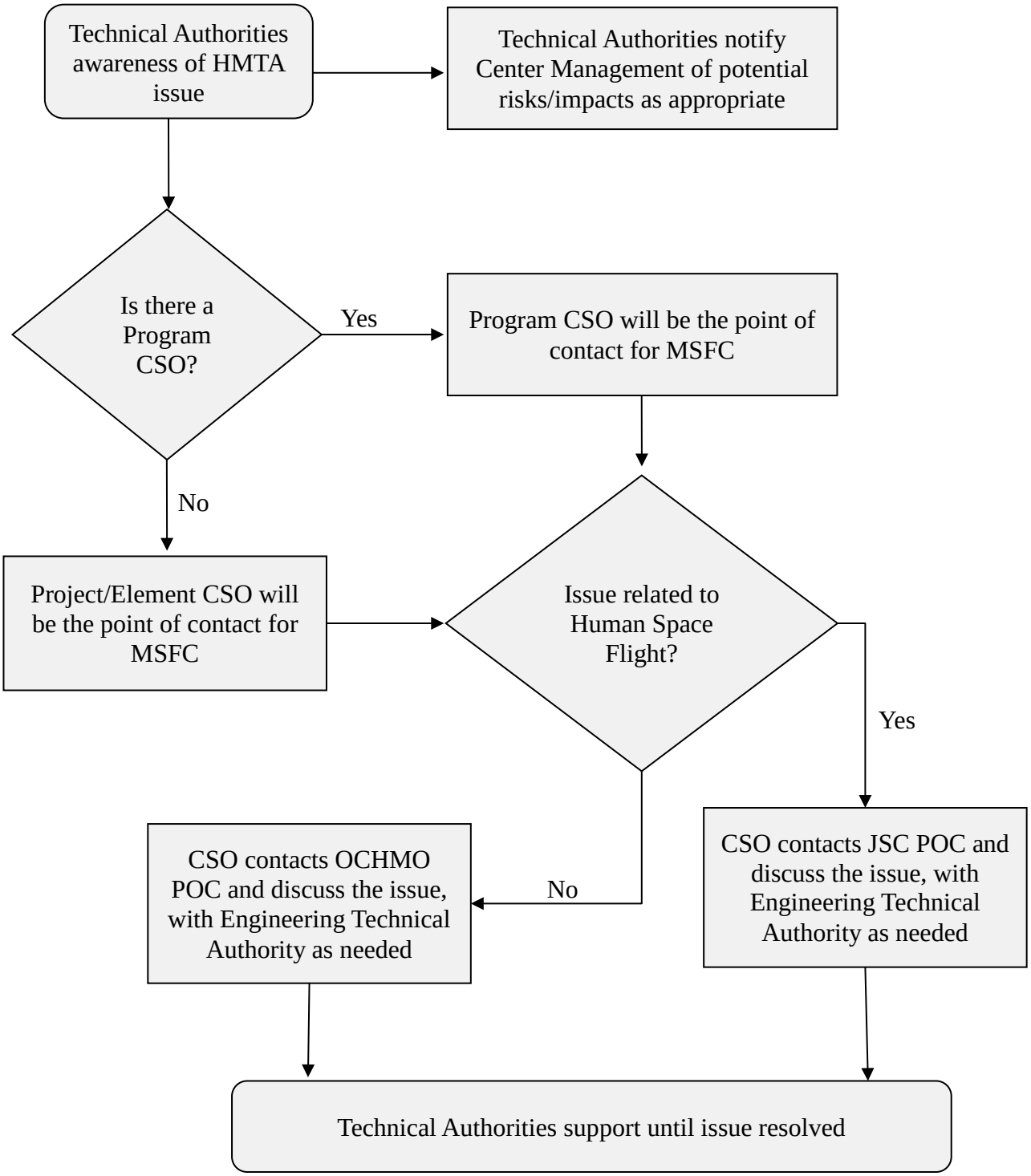
5.3.8.1 The MSFC Program Chief Safety and Mission Assurance Officers (CSOs) function as the Directorate-level focal point for the respective Program activities within the SMA Directorate. The MSFC Program CSOs execute the SMA Technical Authority through delegation from the MSFC SMA Director. To effectively perform this duty, the MSFC Program CSOs must possess a thorough understanding of the Program systems architecture, broad and deep discipline knowledge, good technical judgment, and solid leadership and communication skills to make sound technical decisions. While the MSFC Program CSOs have the overall responsibility for assuring that appropriate specifications and standards have been integrated and adopted by the Program, the MSFC Program CSOs rely on systems experts and discipline experts residing within the agency-wide institutional SMA organization (and elsewhere) to determine that

the requirements and their associated standards are appropriate to assure safe flight. Further, the MSFC Program CSOs assure that functional systems themselves are safe to fly and are operationally reliable.

5.3.8.2 The MSFC Program CSOs identify potential risks and assist the formulation of risks mitigation and resolution pertaining to the respective Program and provide timely, day-to-day technical positions. The MSFC Program CSOs maintain real-time communications with the Programs, the Project/Element CSO's, and the institutional SMA organization to ensure timely access to Program information, impending decisions, and analysis or verification results. The MSFC Program CSOs maintain a very close working relationship with the respective Program Managers and Chief Engineers, and with these functions, assure an atmosphere of checks and balances within the Program. The MSFC Program CSOs engage appropriate discipline experts when a waiver, NCR, or exception is written against an MSFC-responsible SMA requirement. The MSFC Program CSOs make an assessment of launch readiness, from the standpoint of safe flight and ground operations, and attest to flight readiness at the appropriate program pre-flight readiness reviews. Further, the MSFC Program CSOs independently assess Program risks and keep the Agency Chief, OSMA informed of significant issues.

5.3.8.3 As described in Section 5.2, the Program CSO serves as the point of contact at MSFC to facilitate communication of potential health and medical issues to the HMTA, and works with the HMTA to support issue resolution among MSFC, JSC, and HQ. Figure 5.3.9 depicts the HMTA process flow.

Figure 5.3.9: HMTA Process Flow



5.3.9 Project/Element Chief Safety and Mission Assurance (SMA) Officers

5.3.9.1 The Project Chief SMA Officers (CSOs) execute the SMA Technical Authority via delegation of technical authority flows from the MSFC Center Director to the SMA Director and through the Program CSO. Essentially, the Project/Element CSOs are the day-to-day face of SMA to the Project/Element Manager and Chief Engineer, and perform similar duties as described for the Program CSOs above, but instead at the Project and Element levels.

5.3.9.2 In addition, and for further clarity, the Project/Element CSOs maintain close communication with and functionally report to the respective Program CSO on issues and assessments associated with areas of responsibility, particularly those having potential of becoming integrated Program issues. They support higher level CSOs in briefing OSMA, Program CSOs, SMA Director, and/or Program Organizational Management on significant technical issues.

5.3.9.3 The Project/Element CSOs review technical requirements and standards that flow down from Program level, provide recommendations thereto, and assist the respective Project/Element in development of tailored sets of requirements. The Project/Element CSO will provide input and recommendations on any Project/Element unique technical standard.

5.3.9.4 The Project/Element CSOs represent SMA as the SMA Technical Authority on Project/Element engineering review boards, configuration control boards, milestone reviews, and attest to system flight readiness by signature on the project/element control gates such as System Requirements Review, System Definition Review, Preliminary Design Review, and Critical Design Review, and Element/Project Flight Readiness Reviews. Project/Element CSOs facilitate the Project risks identification and mitigation development to support the Project risk management activities and Program risk reviews. Project/Element CSOs are responsible for preparation, integration, and delivery of flight readiness assessment documentation packages and signed Certificate of Flight Readiness statements to the Center Director and appropriate Program and SMA Management representatives in support of flight milestone reviews.

5.3.9.5 The Project/Element CSOs support HMTA implementation through the utilization of SMA personnel as HMTA awareness and communication links as described in 5.2. In the absence of a corresponding Program CSO position at MSFC, the Project/Element CSOs serve as POCs at MSFC to facilitate communication of potential health and medical issues to the HMTA, and work with the HMTA to support issue resolution among MSFC, JSC, and HQ.

5.3.10 SMA Management

SMA Management including Department Managers and Branch Chiefs are responsible and accountable for the performance of the systems safety, reliability engineering, quality assurance, and software assurance technical work of the Center. SMA Managers will foster an environment where anyone at the center can bring SMA issues and/or Formal Dissent to them. SMA Managers will promote technical conscience by encouraging open healthy debate and will be the dedicated listeners when their workforce raises technical issues. When there are formal dissensions, SMA management will support elevation of those conflicts to the appropriate council or board to seek resolution. SMA Managers will actively participate on the SMA Council and other organizational technical briefings/meetings and provide discipline expertise and guidance when technical decisions are being made. SMA organizational managers will support the Chief SMA Officers in their duties as technical authorities, and will serve as

the SMA Technical Authority in the absence of the CSO. SMA organizational management will also ensure the effective operations within the Directorate and effective communication both internally and externally with other stakeholders.

5.4 Formal Dissent Process.

Because technical disagreements are normal in engineering organizations and resolutions of those disagreements are an integral part of the maturation and optimization of a design, MSFC provides an adjudication process for resolution of complex technical conflicts. CEs, CSOs, and program/project management should strive to resolve any differences occurring in the course of daily business. In instances where an individual remains dissatisfied with the technical or programmatic resolution of their issue, they may choose to declare a Formal Dissent. NASA has specified a process for resolving Formal Dissents that rise above the center. Within MSFC, Formal Dissents are adjudicated as outlined in this section and depicted in figures 5.4.1 and 5.4.2. This process can ultimately flow up to the NASA Administrator for final disposition. These conflicts can be technical disagreements between individuals or groups, or can be an individual's technical conscience issue where he/she perceives that a technical problem or safety issue is not being given proper attention.

5.4.1 The initiation of a Formal Dissent will be communicated to two levels along the TA Formal Dissent resolution path (see Figures 5.4.1 and 5.4.2) above the level at which the dissent occurred.

5.4.2 This FD process is intended to assure that Engineering and SMA Technical Authorities have a method of elevating conflicting opinions on the implementation of requirements and technical processes. Anyone may elevate technical concerns and issues related to safety and flight operations to the Engineering Director, the SMA Director, or the Center Director at any time; however, individuals are strongly encouraged to engage their appropriate Center technical authorities before contacting these Directors.

5.4.3 The adjudication process follows the delegations of technical authority so that, at each delegated level, the Formal Dissent can be resolved or elevated to the next level if there is no resolution. Resolutions of conflicts affecting a requirement under the authority of a higher level will be elevated to that level for approval. The delegations of technical authority typically flow from the NASA Administrator to the NASA Chief Engineer, the NASA Chief SMA Officer, and to the Center Director. In cases where Technical Authority is directly delegated to the MSFC Center Director, the adjudication process has a direct path to NASA Headquarters. It is important to note that when the Center Director is not delegated the Technical Authority for certain requirements, the direct reports are still accountable to the Center Director and, as a minimum, courtesy briefings are required in conjunction with technical opinions, positions, or decisions being elevated.

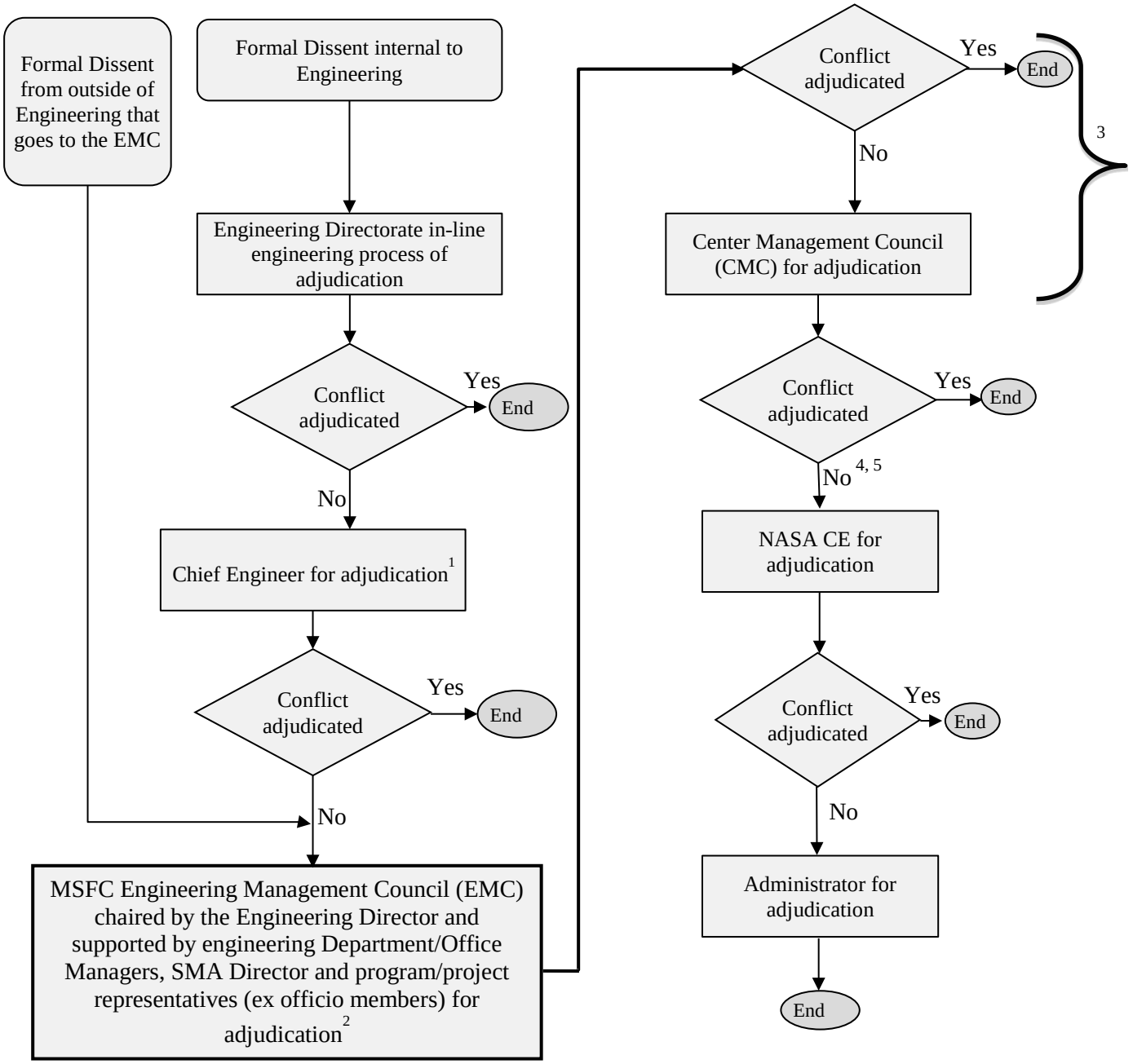
5.4.4 Conflicts in Technical Authority can arise at any level. These conflicts can be among Project/Program Management, Engineering, and SMA, or they may be internal to each. During the adjudication process all parties involved in the technical conflict will be informed of councils, boards, and meetings and will have the opportunity to present their data and opinions. The EMC and the SMAC may hold a joint meeting when it is advantageous to resolving a conflict.

5.4.5 It is important to note that when a Formal Dissent exists, the dissenter has the option to take his/her position to the next level of technical authority for adjudication. However, it is the responsibility of the dissenter to develop and to present his/her Formal Dissent (with supporting rationale) at the technical

authority level that is requested to resolve the conflict. For example, if an engineer disagrees with a technical decision made by a project chief engineer, the engineer can request the EMC to resolve the conflict. In this instance, the engineer would develop a presentation and brief the EMC to communicate his/her Formal Dissent. If the EMC's decision is not in favor of the dissenter, the dissenter then has the option to take his/her position to the CMC, or to accept the EMC's disposition (in which case no further elevation would be required). Should the adjudication process proceed to the next level (in this example, the CMC), the dissenting engineer would again be responsible for developing and briefing his/her position. At any level, if the decision is in support of the dissenter, the opposing side then has the opportunity to declare a Formal Dissent and take the discussion to the next higher level.

Figure 5.4.1 shows the flow of Formal Dissent that go through the Engineering Management Council (EMC).
Figure 5.4.2 shows the flow of Formal Dissent that go through the Safety Mission Assurance Council (SMAC).

Figure 5.4.1: Flow of Formal Dissent Through the Engineering Management Council (EMC)



Notes:

[1] Disagreement at the project/element level should be brought to the Program Chief Engineer for resolution prior to the EMC (for MSFC managed program).

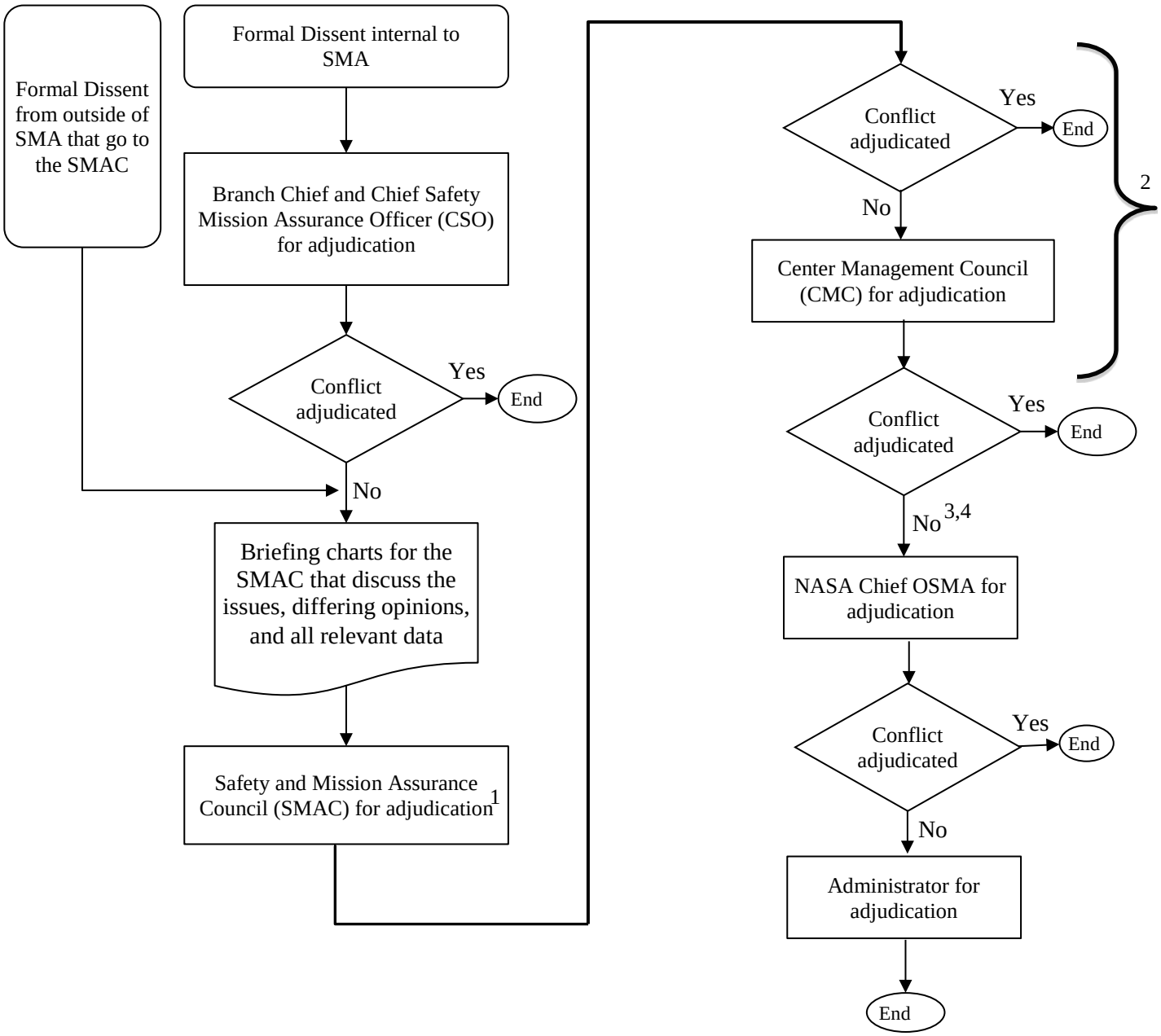
[2] If the program/project/element is external to MSFC, this briefing is to gain MSFC Engineering position prior to going outside of MSFC.

[3] In a case that the Center Director has not been delegated Technical Authority, this step is to brief the CMC only, not to seek adjudication.

[4] Center Director will determine if a Formal Dissent presented requires an expedited resolution at the Agency level.

[5] The Adjudication process above the Center is described in NPD 1000.

Figure 5.4.2: Flow of Formal Dissent through the Safety Mission Assurance Council (SMAC)



Notes:

[1] If the program/project/element is external to MSFC, this briefing is to gain MSFC SMA position prior to going outside of MSFC.

[2] In a case that the Center Director has not been delegated Technical Authority, this step is to brief the CMC only, not to seek adjudication.

[3] Center Director will determine if a Formal Dissent presented requires an expedited resolution at the Agency level.

[4] The Adjudication process above the Center is described in NPD 1000.

5.5 Effectivity

The expiration date of this plan is not to exceed 5 years from the effective date.

6. Cancellation

MCP 8070.2C-2, (MSFC) Technical Authority Implementation Plan, dated January 17, 2017

STEVEN MILEY

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Steven C. Miley for
Jody Singer
Director

Appendix A. Acronyms

CDR	Critical Design Review
CE	Chief Engineer
CEO	Chief Engineers Office
CoFR	Certificate of Flight Readiness
CMC	Center Management Council
CSO	Chief Safety Mission Assurance Officer
EMC	Engineering Management Council
FD	Formal Dissent
HMTA	Health and Medical Technical Authority
LDE	Lead Discipline Engineer
MSFC	Marshall Space Flight Center
NCR	Non-conformance Report
OCE	Office of the Chief Engineer
OCIO	Office of Chief Information Officer
OSMA	Office of Safety Mission Assurance
PDR	Preliminary Design Review
SMA	Safety Mission Assurance
SDR	System Definition Review
SMAC	Safety and Mission Assurance Council
SMA TA	Safety and Mission Assurance Technical Authority
SMSR	Safety & Mission Success Review
SRR	System Requirements Review
SR&QA	Safety, Reliability, and Quality Assurance
SwTA	Software Technical Authority
SLS	Space Launch System